

Systematic Evaluation of Environmental and Economic Results - A New Way to Evaluate the Results of ECR Decisions

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Outline

1. Introduction and brief context
 - i. What is evaluation?
 - ii. Why evaluate?
 - iii. Evaluation requires...
2. Introduction to SEEER
 - i. Emerging important trends in evaluation
 - ii. Goal of SEEER
 - iii. Key elements in SEEER
 - iv. Peer feedback
 - v. Emerging dimensions in SEEER
3. Findings to date
 - i. Oregon
 - ii. EPA
 - iii. DOI
4. What's next?

What is Evaluation?



Many view evaluators
with apprehension

- Definition:
 - Systematic collection of information
 - Used to make improvements and judge value
- Characteristics of Evaluation
 - Useful – should have utility for the audience
 - Feasible – should be practical in terms of time and money
 - Fair/Ethical – should minimize bias and use appropriate approach for collecting information from/about people
 - Technically Adequate – should utilize evaluators with appropriate level of expertise
- Evaluation vs. Research

Reasons for Evaluating ECR

- Federal mandates, including:
 - Government Performance and Results Act
 - Office of Management and Budget (OMB) Program Assessment and Rating Tool (PART)
 - OMB/Council on Environmental Quality (CEQ) ECR policy memorandum (November 2005)
- Potential users require evidence that ECR is an effective alternative
 - Short-term - comparing cost-effectiveness of processes
 - Long-term - comparing ultimate outcomes
- ECR practitioners (and programs):
 - Have an interest in improving their practice and services
 - Must find ways to demonstrate outcomes that are credible to the people who provide the funding and address their key questions

Evaluating ECR

- Two evaluation targets for ECR
 - Practice of ECR – how well do we adhere to best practice
 - Results of ECR – what outcomes does ECR provide compared to an alternative
- Two levels of evaluation
 - Individual ECR cases
 - ECR/Client programs
- Most efforts to evaluate ECR have focused on practice and primarily on individual cases
- Thus the greatest need is for evaluating the results/effects of ECR

What Does Evaluate Results of Decisions Mean?

<u>Evaluate</u>	Evaluate <u>Results</u>	Evaluate Results of <u>Decision</u>
Determine merit or worth of the decision, usually in comparison to a plausible and likely alternative.	Results are often specific to the decision.	Evaluate results attributable to the decision from the process, compared to the results from a decision using an alternative decision process.

Evaluation is Now *Normally* Results / Achievement Focused

Move to Results

- Results evaluation now expected
- These expectations often exceed what is possible
 - Simple measures of change in nutrients attributable to interventions in the Chesapeake Bay
- Decisions will be made without evaluation input if evaluation does not address results
 - A lot of evaluation is still process focused

Possible Consequence



There is a Strong Move Towards Experimental Designs in Evaluation



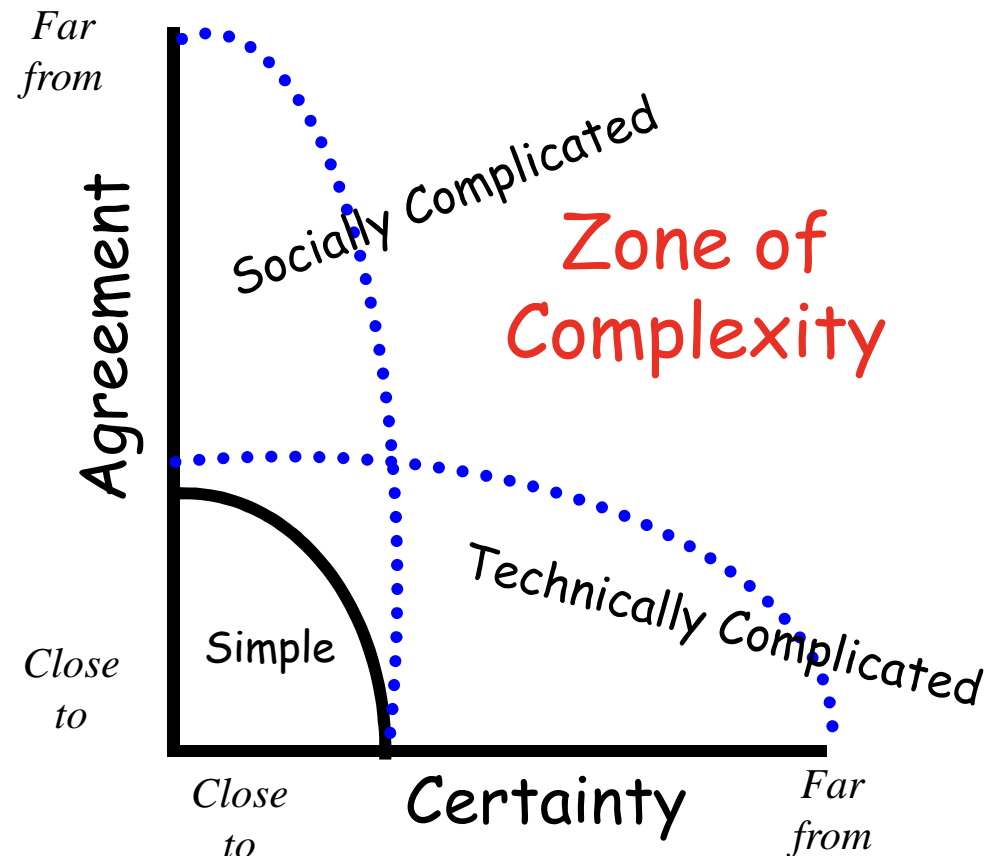
- Evaluations not consistently reporting the results that are attributable to the intervention
- Experimental designs
 - Aid assignment of causality
 - Example – randomly assigning cases to ADR and to other processes

Gordon Smith and Jill Pell, British Medical Journal (courtesy Michael Patton)

<http://bmj.bmjournals.com/cgi/content/full/327/7429/1459?ck=nck>

Evaluating ECR (The Stacey Matrix)

- Evaluation challenging
 - Attribution
 - Compare to alternative
- Environmental and resource effects are very complex
 - Technically complex
- Collaborative decisions are complex
 - Socially complex



Vision for SEEER

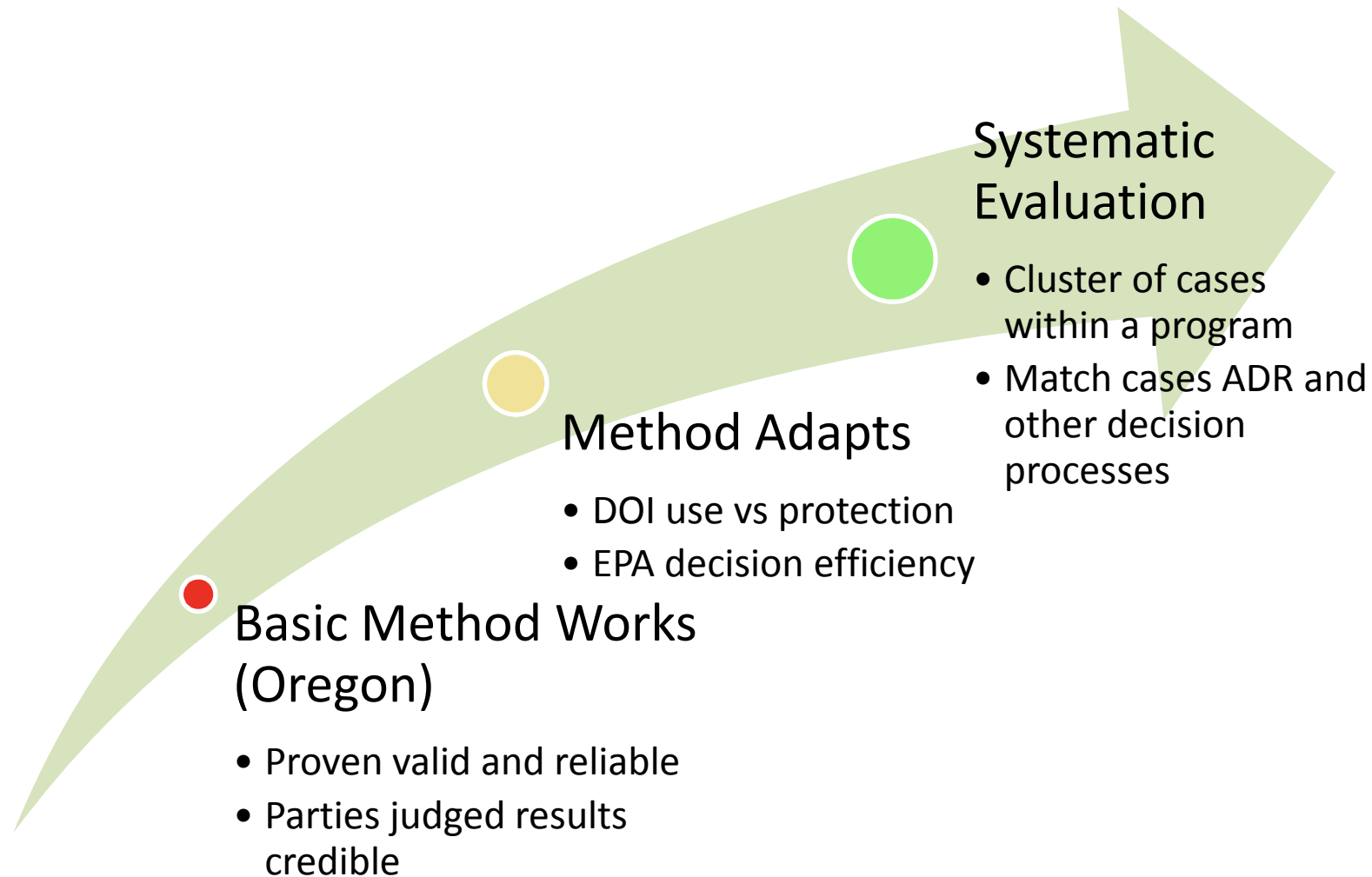
Vision

- We can evaluate the contributions of collaborative decision making processes to the environment and people who are affected by or use the environment

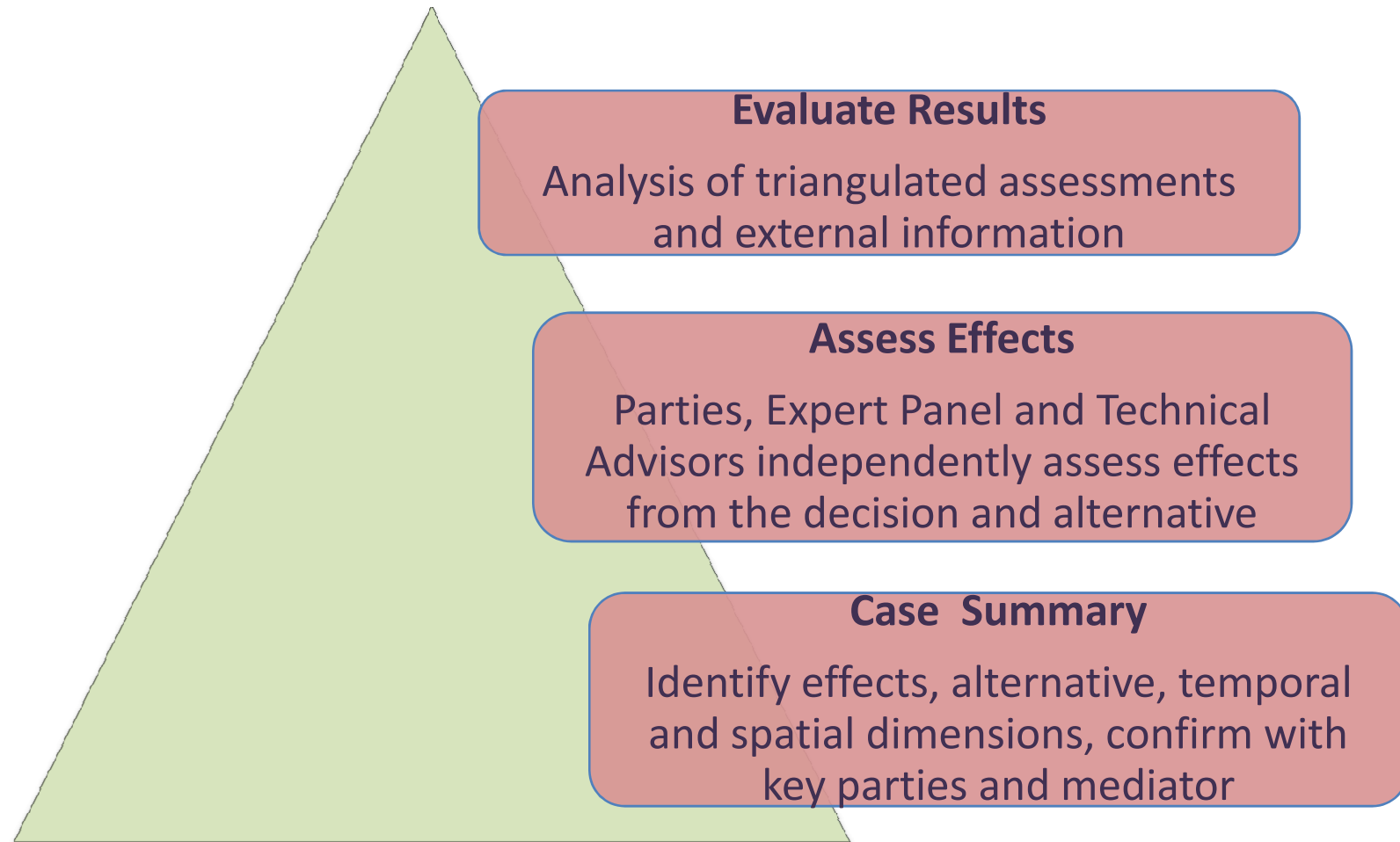
Characteristics of SEEER

- Systematic
 - Can compare across cases, decision processes
- Feasible
 - Timely methods while reducing costs
- Credible
 - Demonstrated valid and reliable method (where triangulation used)
 - Credible to evaluation stakeholders and parties to the case
 - Evaluators applaud method
- Compare across unlike cases
 - Consistent method
 - Adaptable to each case

SEEER Now Addresses: What Does ECR Systematically Add to Decision Making?



SEER Process Overview

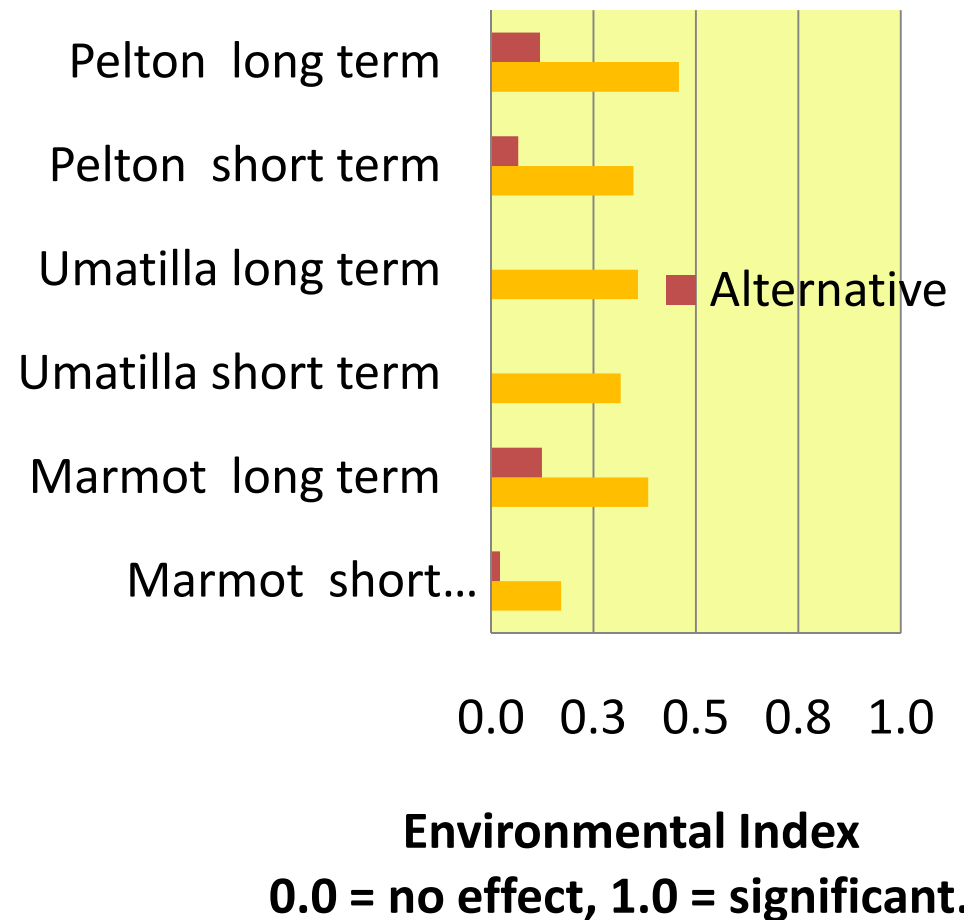


Oregon Cases

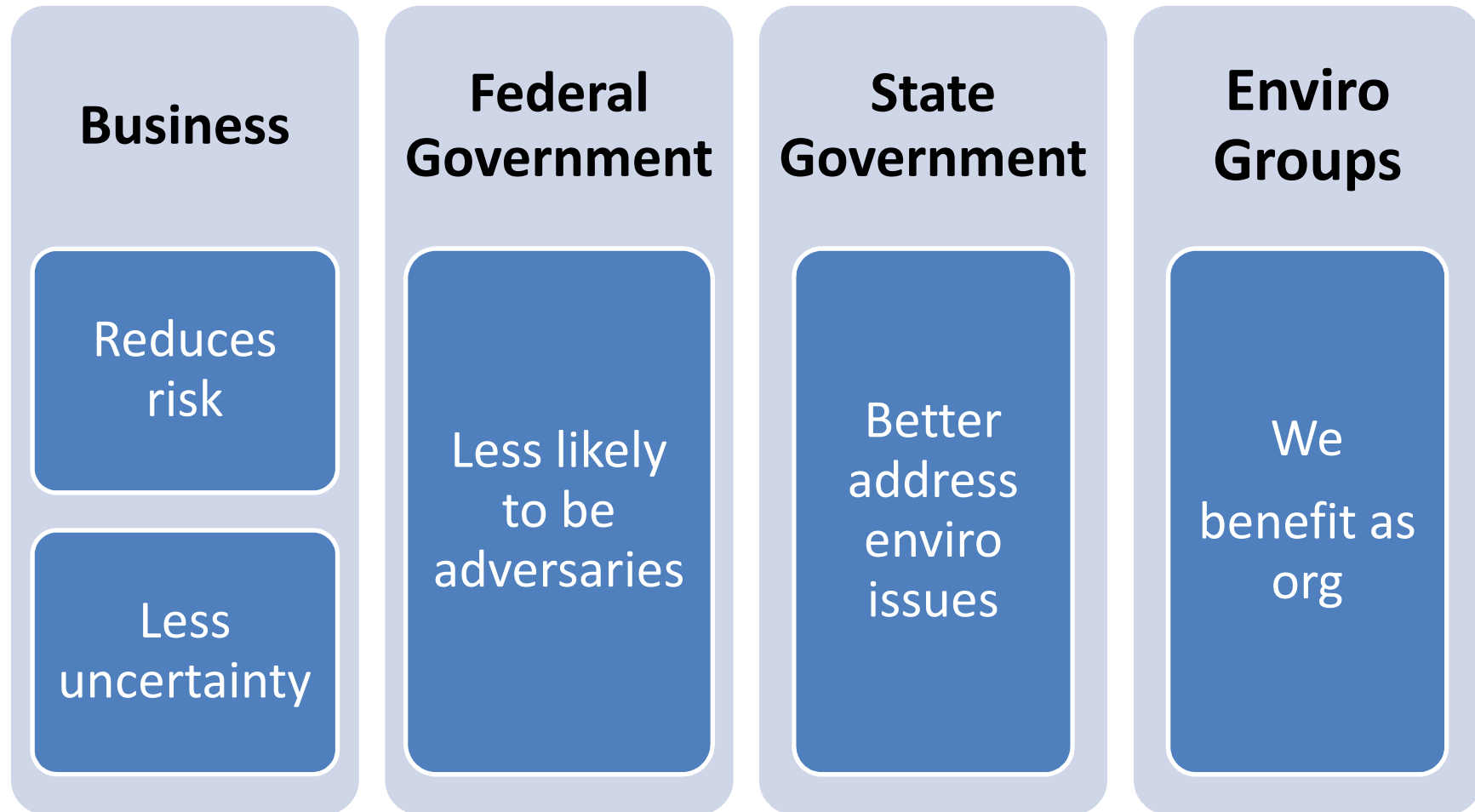
- Six cases evaluated in 2003-04
 - Marmot and Pelton Hydro Relicensing
 - Umatilla Water Exchange
 - Fish Passage Task Force (policy)
 - Mid Columbia HCP
 - Indian Ford Creek
- Methods not developed at that time to have parties compare environmental effects in their cases to alternative

Fish and Water Effects Using Oregon Cases

- Fish and water effects include several elements:
 - Habitat
 - Passage
 - Water quality and flow
- These are the judgments of the science panel
 - Alternative would not have brought water to the Umatilla River

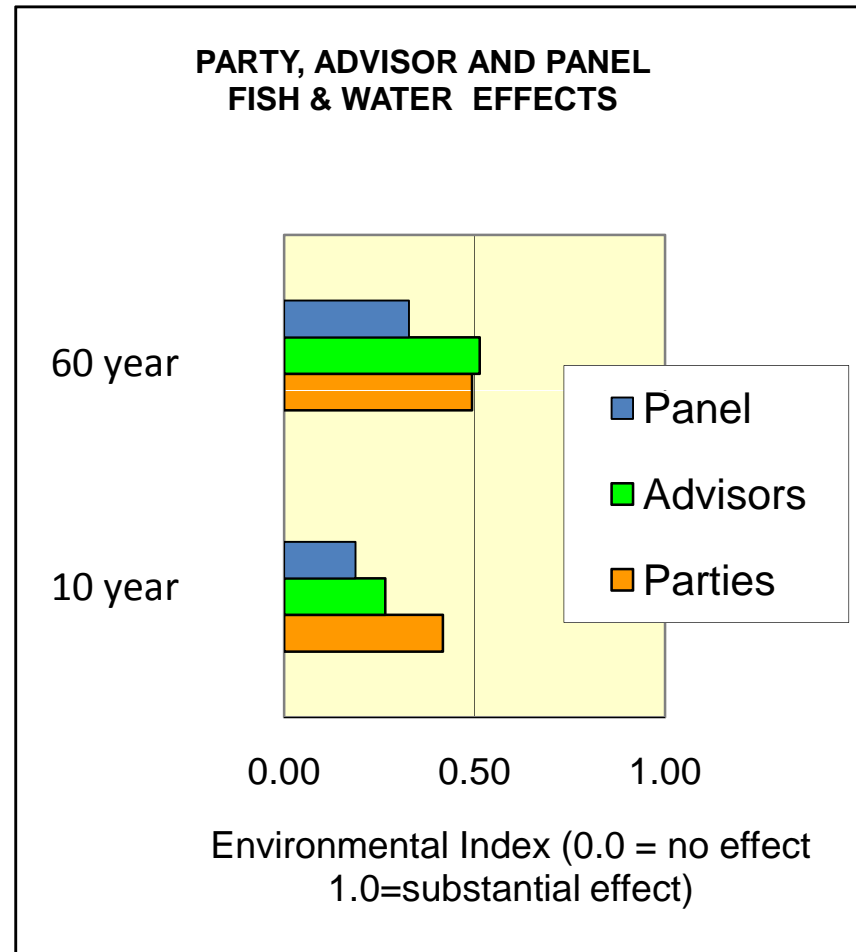


Perceived Benefits of Improved Social Capital in Oregon Cases



Triangulation Enabled Testing Validity and Reliability (Oregon)

- Party, advisor and expert panel judgments of environmental effects
 - Cronbach's Alpha 0.973 to 0.986 (>0.8 considered reliable)
 - Correlation coefficients significant at 0.01 level
 - Judgments consistent with external science measures
 - Party judgments not valid on cases where information not shared and/or where some key interests were not involved in the collaborative process



Gains in Environmental Management in Oregon Cases

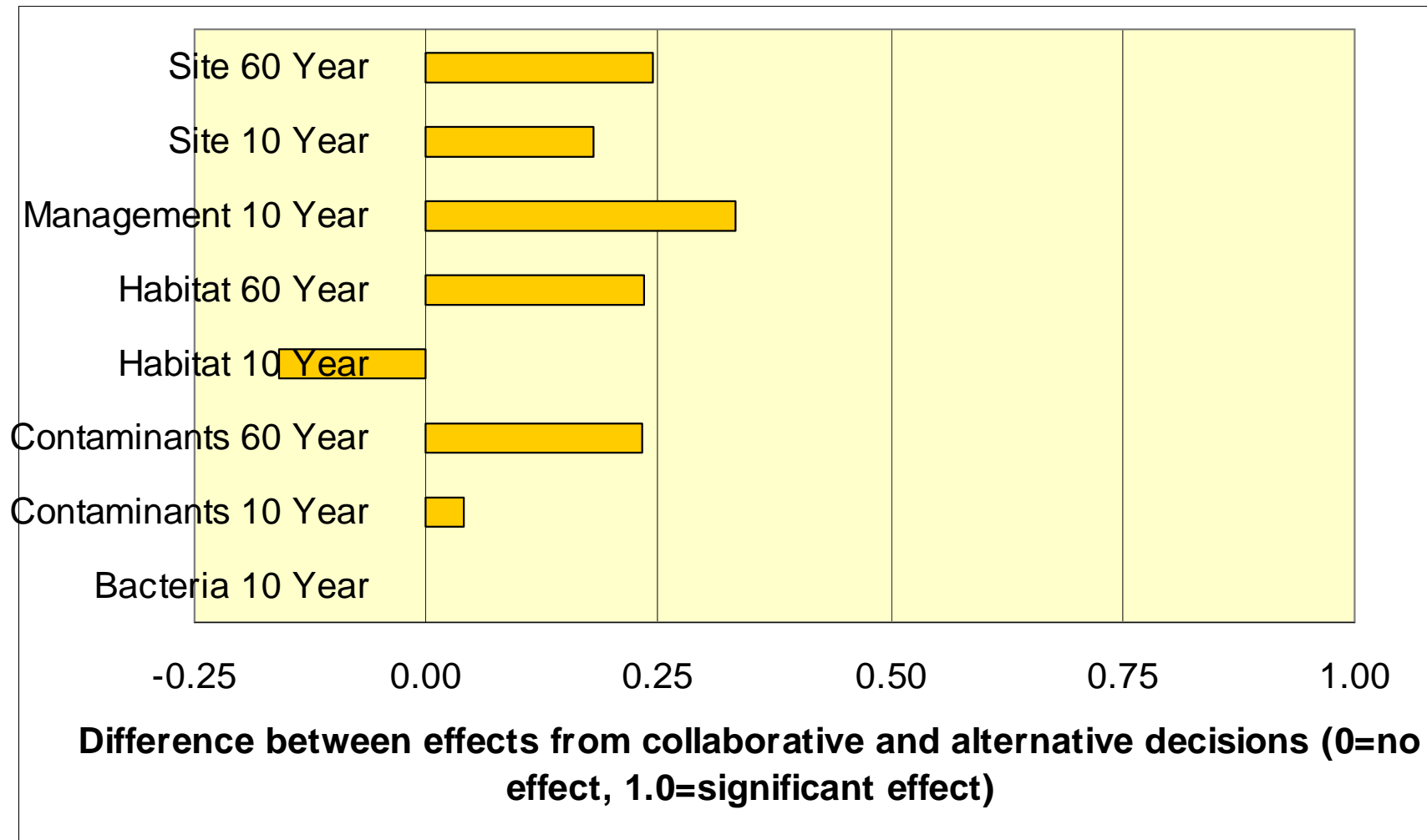
Effect	Oregon cases
	0=totally disagree, 10=totally agree
Environmental stewardship more of a priority	7.09
Better information about environmental conditions	7.16
Stronger environmental management tools	6.78
Strengthened focus on actions with the greatest impact	7.09
Now clear who has management authority on these issues	6.30

Have now enhanced questions to better match enforcement and permitting, and rule making where combining use and protection and decision effectiveness are better concepts

EPA Cases

- Evaluated four water cases in 2006
 - GE Pittsfield
 - Washington Navy Yard
 - Philadelphia Prisons
 - Washington Aqueduct
- Parties compared environmental and economic effects of decision to alternative
- Did not use triangulation on initial cases
- Will use full methodology on future 18 Superfund ECR and non-ECR cases and Combined Sewer Overflow case

ECR Process Achieved Better Environmental Results (EPA Water Cases)

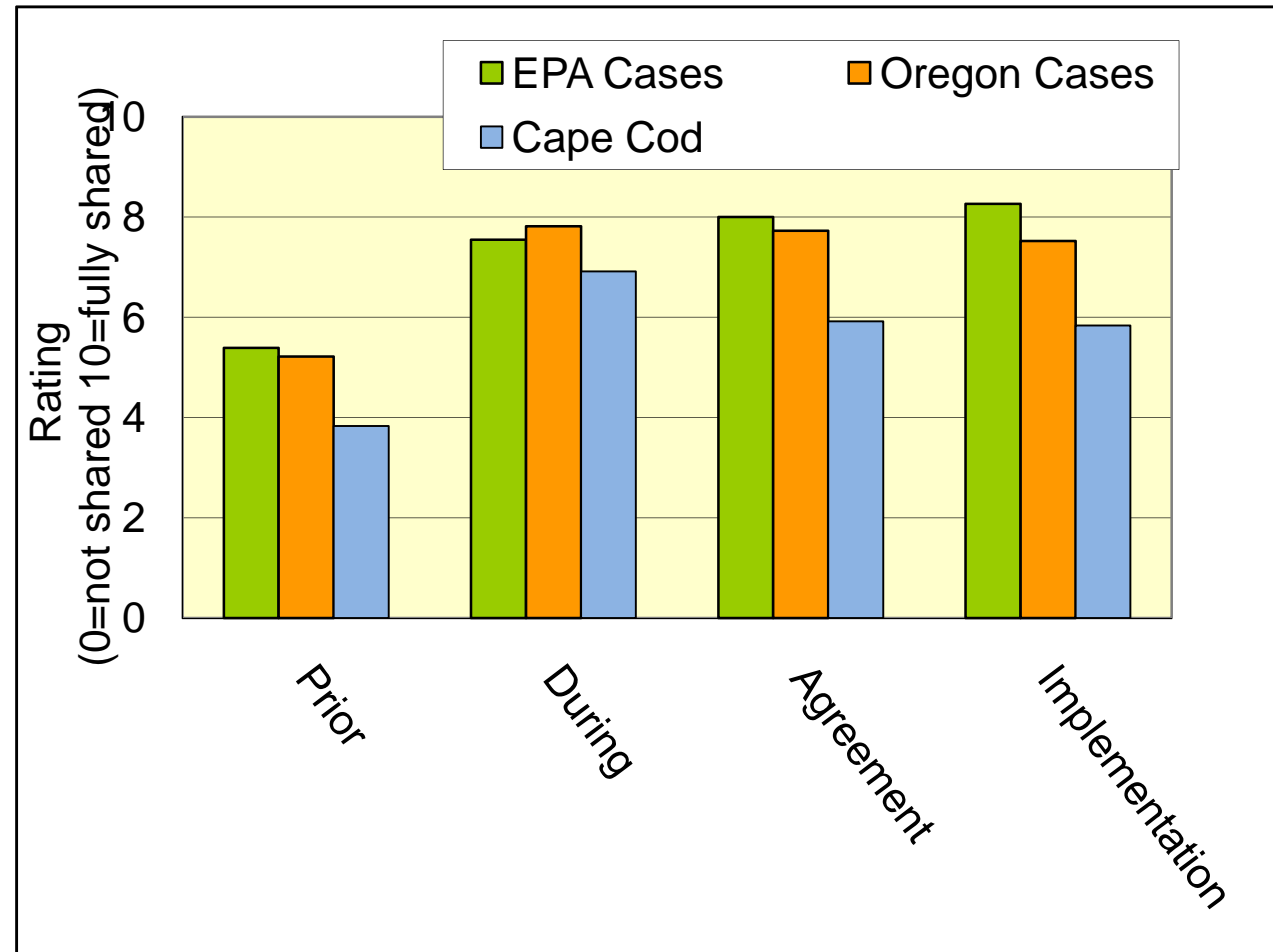


LESS TIME TO REACH AND IMPLEMENT A DECISION

	Superfund GE Pittsfield	Permitting Washington Navy Yard	Washington Aqueduct	Enforcement Philadelphia Prisons
Change in hours per week	-27	-56	-41	5
Number of weeks over which savings occur	78	13	13	13
Estimated hours saved per week	-2106	-728	-533	65
Estimated value of time saved	(\$133,731)	(\$46,228)	(\$33,846)	\$4,128

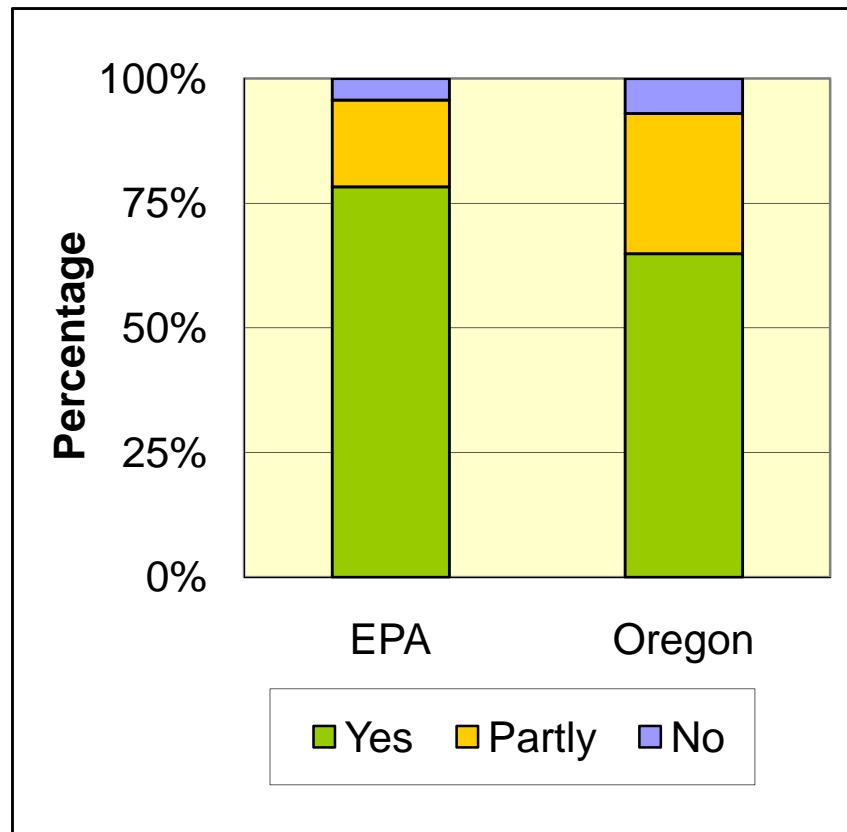
Improved Information Inputs to Decision

- Information is a key decision input
- Sharing improved on all groups of cases



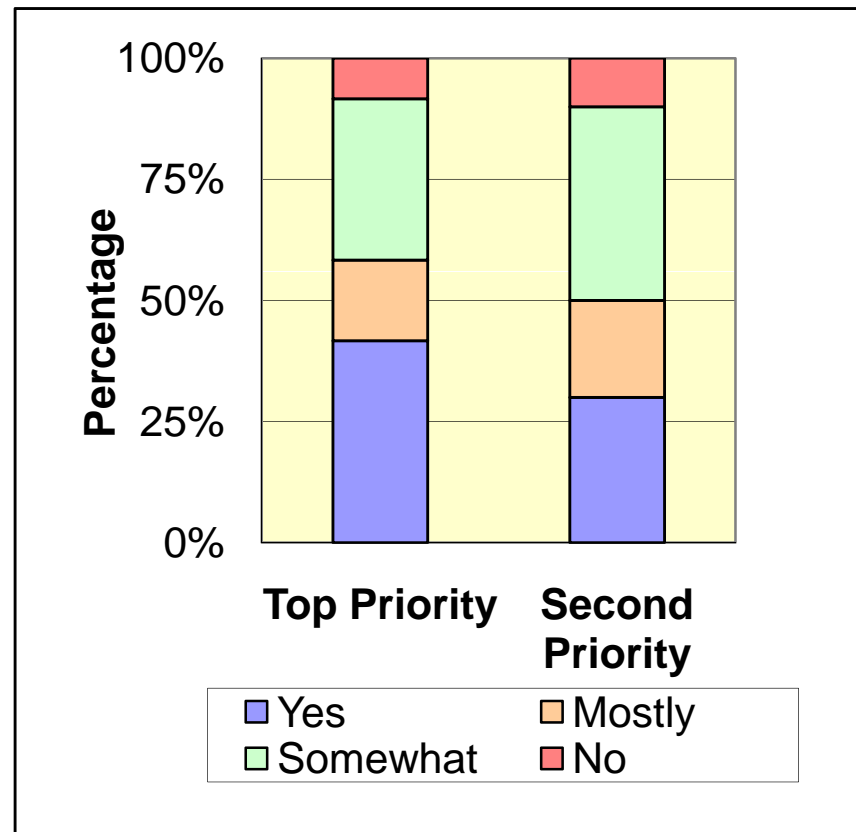
Was Priority Issue Addressed?

Underlying Environmental Issue Fully Addressed?



Oregon and EPA

Top Priority Fully Addressed?



Cape Cod

Interior Cases

CADR Evaluating ORV Use Agreements



and the

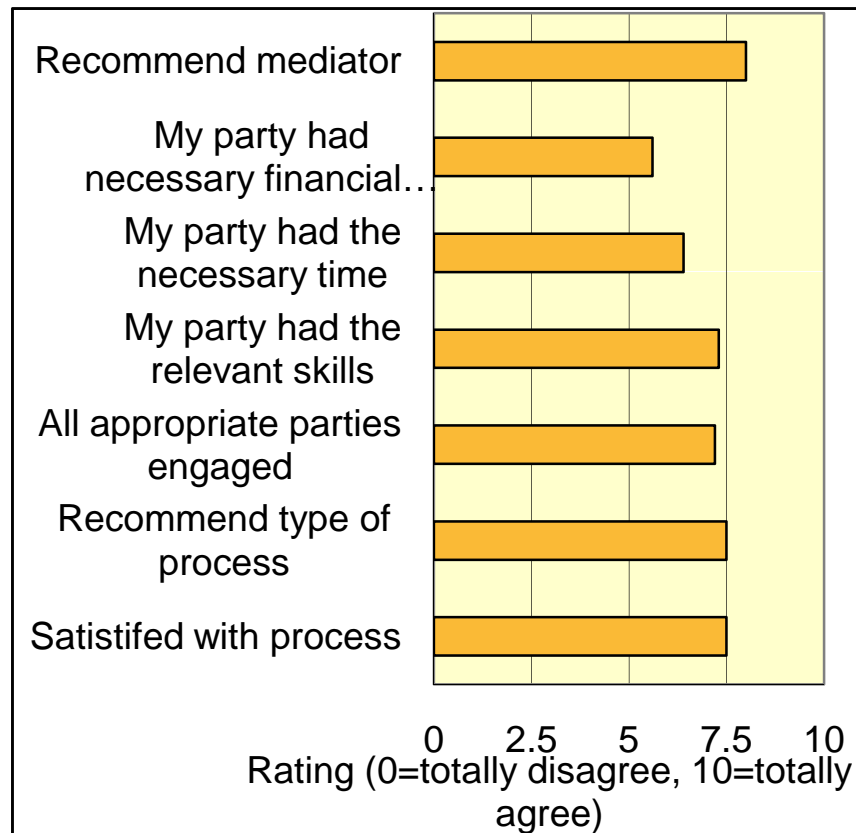


At Fire Island and Cape Cod National Seashores

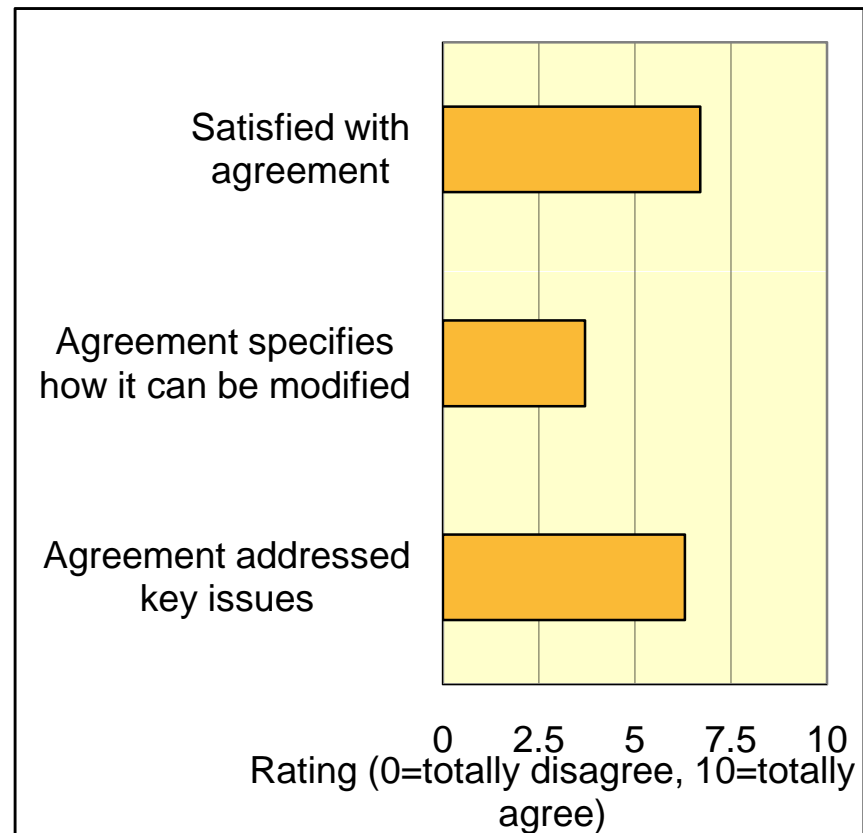


ECR Comparison to Alternative (NPS Writes the Rule for Cape Cod)

Process Better



Agreement Better



Changes Attributable to Use of ADR for Cape Cod ORV Decision

- Parties who reached the agreement for ORV rules and that was implemented, judge the decision to provide, in comparison to NPS writing the rule:
 - Moderately better habit for Plover and other birds
 - Marginal or no improvement in wrack line, shoreline erosion and beachfront habitat
 - Improved ORV management process including ORV sub-committee
 - Enhanced use without impairing key environmental responsibilities
 - Feeling by parties that they “were heard”
 - Moderately more harmonious ongoing dealings on ORV, modest gains in harmony on other issues
 - More efficient rule making (DOI saved 2.9 person years making rule)
 - Ongoing savings administering the rule (1.0 person years annually)
 - Moderate gains in social capital for some

Even Apparently Similar Cases Have Important Differences



Cape Cod
National
Seashore

Tension between vehicle use and ESA

10 – 15 nesting pairs of Piping Plovers

Dynamic dunes and shoreline

Everyday driving needs for residents, visitors and businesses

18 well established seasonal and year round communities in place when park created

Tension between vehicle use and ESA

80 – 90 pairs of Piping Plovers

Dynamic dunes and shoreline

All driving demand is recreational

Park adjoins communities with traditional use, Park lands sparsely and seasonally populated

Important Gains Were Not About Piping Plover

Cape Cod

- There are not many plover and strenuous and apparently effective protections were in place prior to the agreement
- ORV use has been enhanced and ORV management is much more harmonious, without detriment to plover
- Significant annual PY savings
- ORV no longer a major source of friction

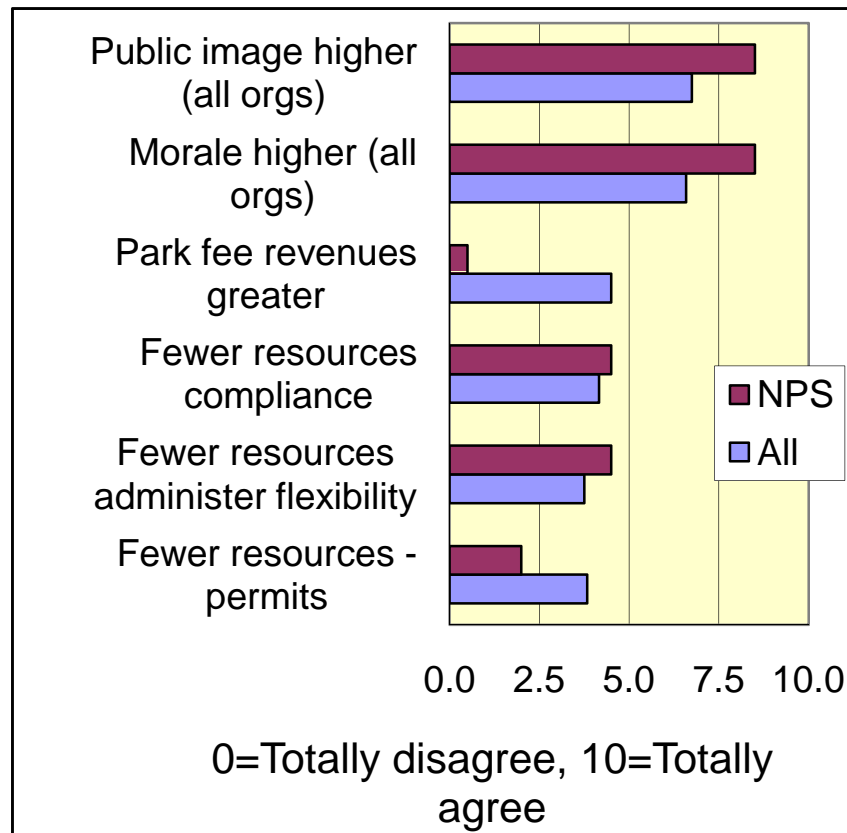
Fire Island

- There are even fewer plover and strenuous and apparently effective protections have been in place
- Significant costs of the settlement process are potentially offset by important gains in relations with communities and in management of ORV within the Seashore

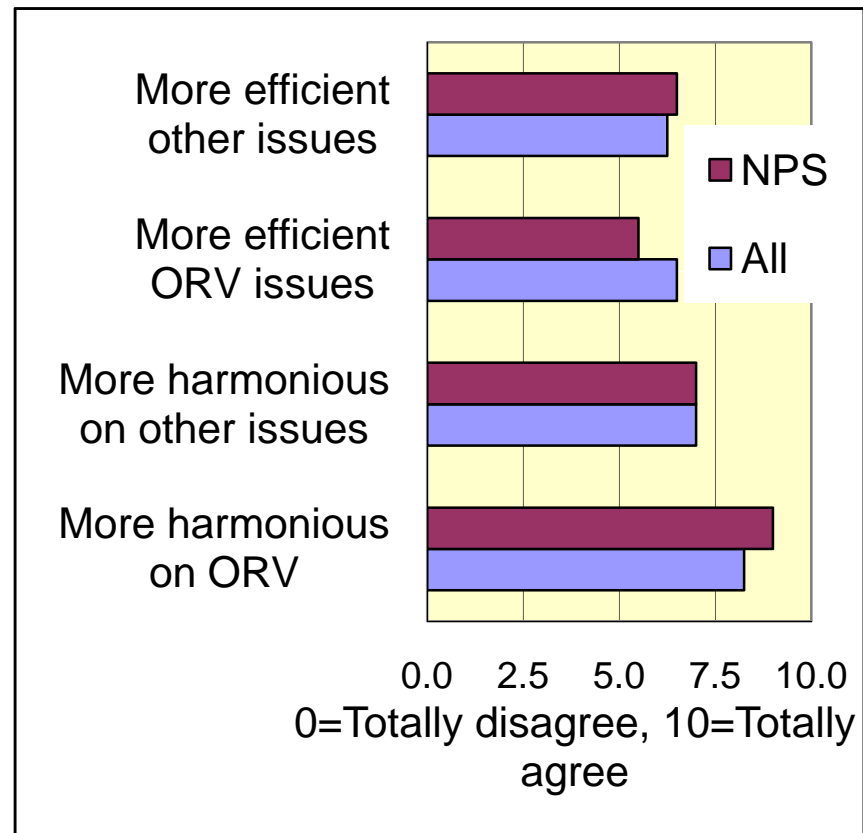
Improve management effectiveness and balance of use and protection of park natural resources.

Results from Collaborative Process Better than Alternative

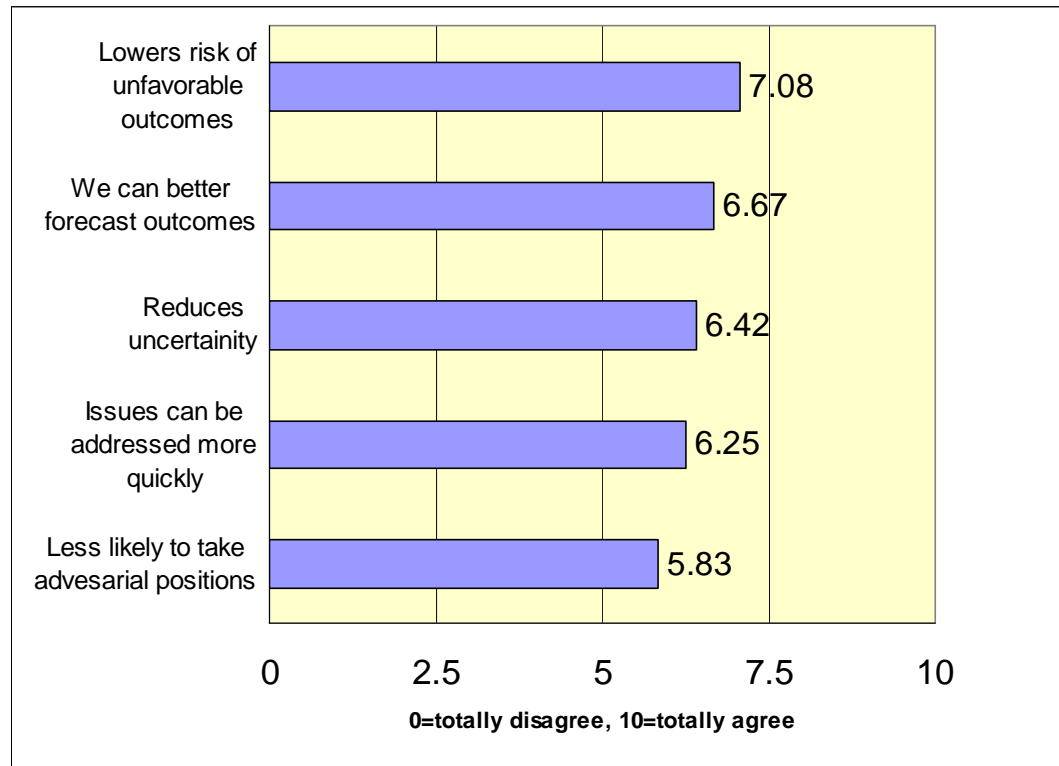
Results of Agreement



Dealings with Other Parties



Gains in Social Capital (for Cape Cod parties)

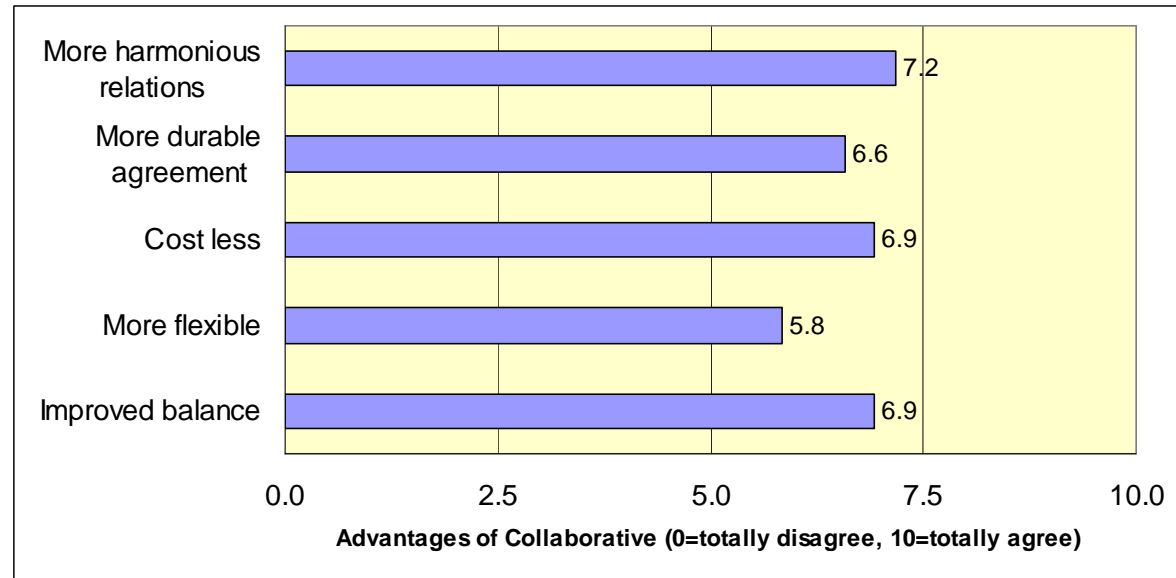


The main benefits of social capital are reducing risk and uncertainty

- Only modest variation across interests

Parties also reported a more durable agreement and agreement was reached more quickly, as benefits of social capital built by process

Advantages of Collaborative (Cape Cod)



- Collaborative process was beneficial compared to the alternative
 - More harmonious relations among parties, improved balance between protection and use and lower costs were most favorably rated

Conclusion

- A few caveats
 - Results are sound for the cases evaluated
 - Not yet representative of ECR practice
 - Methods have varied somewhat for different sets of cases
 - SEEER is still a work in progress
- Summary of Findings (so far ...)
 - Results of ECR can be estimated despite complexity
 - Parties can provide valid and reliable judgments about the effects
 - ECR processes result in positive environmental outcomes
 - ECR processes are effective decision making processes

What Next?

- Improvements to the SEEER Process
 - Decision effectiveness
 - Following scheduled cases, further reduce resource requirements for evaluation – target 50%
- EPA – Superfund and CSO cases using full SEEER method
- DOI – Fire Island

Key Acknowledgements

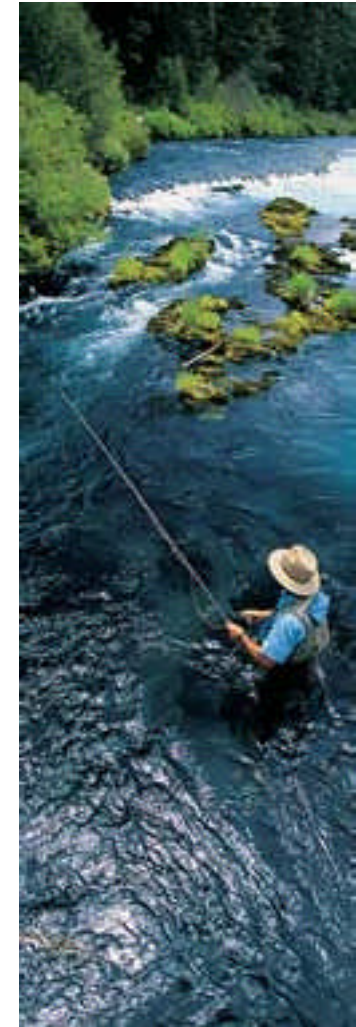
- Funding:
 - William and Flora Hewlett Foundation
 - Conflict Prevention and Resolution Center, US Environmental Protection Agency
 - Office of Collaborative Action and Dispute Resolution, US Department of the Interior
- Parties, practitioners and advisors
- Colleagues
 - Mike Niemeyer, Oregon Department of Justice
 - Dr. Bonnie Colby, University of Arizona

ANNEX

Economic Valuation in SEEER

Valuing Economic Effects

- Valuing the estimated change in the resource enables us to generate useful indicators of the effectiveness of the decision
- This is feasible for some resource and environmental settings, but not all
 - Studies have estimated the value of some recreational activities such as recreational fishing
 - We can estimate the potential value of increasing the numbers of fish available for commercial harvesting
 - Public health provides values we can associate with reducing e coli levels
 - But for Piping Plover we cannot move from the estimated increase in bird years to a monetary value



Calculating the Value of Fish Returning to the Umatilla River

- Prior to implementation Umatilla River waters were fully used for irrigation
- The alternative did not return water to the Umatilla
- Following 1994 implementation of the agreement Steelhead, Spring and Fall Chinook and Sockeye returned in increasing numbers

Species	Per Fish Value Using BTM	Umatilla
		1993 – 2014 (\$2004 M)
Steelhead Trout	\$72	\$3.96
Spring Chinook	\$104	\$8.32
Fall Chinook	\$104	\$12.48
Coho	\$104	<u>\$6.24</u>
Total		\$31.00

What Economic Values Are Associated with the Umatilla Case?

- Re-establish tribal and non-tribal fish harvests
- Reliable source of water for peak irrigation season
- Costs of monitoring irrigation water-spreading under the agreement
- Costs of installing fish screens and ladders
- Social capital effects:
 - Enhanced reputation, good will
 - Enhanced certainty and ability to plan
 - Better cooperation and problem solving across parties
- Better dispute resolution capacity/skills of participants
- Improved scientific and resource management knowledge among parties and in the region